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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

FEE TRANSMITTAL for FY 2004

Effective 10/01/2003. Patent fees are subject to annual revision.

☑ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT ($) 0.00

Complete if Known	
Application Number	10/017,410
Filing Date	12/14/2001
First Named Inventor	Peggy J. Farnham
Examiner Name	Misook Yu
Art Unit	1642
Attorney Docket No.	960296.97401

METHOD OF PAYMENT *(check all that apply)*

☐ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None

☑ Deposit Account:

Deposit Account Number: 17-0055

Deposit Account Name: Quarles & Brady LLP

The Director is authorized to: *(check all that apply)*

☑ Charge fee(s) indicated below ☑ Credit any overpayments

☑ Charge any additional fee(s) or any underpayment of fee(s)

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FEE CALCULATION

1. BASIC FILING FEE

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
1001	770	2001	385	Utility filing fee	
1002	340	2002	170	Design filing fee	
1003	530	2003	265	Plant filing fee	
1004	770	2004	385	Reissue filing fee	
1005	160	2005	80	Provisional filing fee	

SUBTOTAL (1) ($) 0.00

2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

	Extra Claims		Fee from below		Fee Paid
Total Claims		-20** =		X	= 0.00
Independent Claims		-3** =		X	= 0.00
Multiple Dependent					=

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description
1202	18	2202	9	Claims in excess of 20
1201	86	2201	43	Independent claims in excess of 3
1203	290	2203	145	Multiple dependent claim, if not paid
1204	86	2204	43	** Reissue independent claims over original patent
1205	18	2205	9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) ($) 0.00

**or number previously paid, if greater; For Reissues, see above

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet	
1053	130	1053	130	Non-English specification	
1812	2,520	1812	2,520	For filing a request for *ex parte* reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	
1252	420	2252	210	Extension for reply within second month	
1253	950	2253	475	Extension for reply within third month	
1254	1,480	2254	740	Extension for reply within fourth month	
1255	2,010	2255	1,005	Extension for reply within fifth month	
1401	330	2401	165	Notice of Appeal	
1402	330	2402	165	Filing a brief in support of an appeal	
1403	290	2403	145	Request for oral hearing	
1451	1,510	1451	1,510	Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive - unavoidable	
1453	1,330	2453	665	Petition to revive - unintentional	
1501	1,330	2501	665	Utility issue fee (or reissue)	
1502	480	2502	240	Design issue fee	
1503	640	2503	320	Plant issue fee	
1460	130	1460	130	Petitions to the Commissioner	
1807	50	1807	50	Processing fee under 37 CFR 1.17(q)	
1806	180	1806	180	Submission of Information Disclosure Stmt	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	
1809	770	2809	385	Filing a submission after final rejection (37 CFR 1.129(a))	
1810	770	2810	385	For each additional invention to be examined (37 CFR 1.129(b))	
1801	770	2801	385	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design application	

Other fee (specify) _____

*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) ($) 0.00

SUBMITTED BY				(Complete *(if applicable)*)	
Name (Print/Type)	Bennett J. Berson	*Registration No. (Attorney/Agent)*	37,094	*Telephone*	608/251-5000
Signature				*Date*	September 1, 2004

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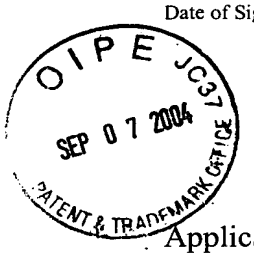
I hereby certify that this correspondence is being deposited with the United States Postal Service on the date set forth below as First Class Mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Date of Signature and Deposit: September 1, 2004

Bennett J. Berson, Reg. No. 37,094



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Peggy J. Farnham
Carrie R. Graveel

Date: September 1, 2004

Serial No.: 10/017,410

Group Art Unit: 1642

Filed: 12/14/2001

Examiner: Yu, Misook

Title: LIVER TUMOR MARKER SEQUENCES

File No.: 960296.97401

RESPONSE TO RESTRICTION REQUIREMENT

Commissioner For Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In response to an Office Action dated August 11, 2004 in the above-identified application, which imposed a requirement for restriction on the applicants, the applicants provisionally elect Group IV, claims 2-4 and 11-15 to the extent that they relate to a polynucleotide that encodes SEQ ID NO:4. This election is made with traverse for groups I-VIII.

Groups III and IV should be examined together

Although the Office Action does not specify why groups III and IV are distinct, the applicants assume that the Examiner intended to apply the same reason as was set forth in the Office Action for groups I and II. For groups I and II, the Office Action asserts that the inventions are unrelated under MPEP 806.04 and 808.01 (see last paragraph on page 3 of the Office Action). MPEP Section 806.04 requires that the claims be both (1) not disclosed as capable of use together and (2) having different modes of operation, different functions or difference effects.

Groups III and IV claims, however, are disclosed as related. Group III and IV claims relate to polynucleotides that encode SEQ ID NO:2 and SEQ ID NO:4, respectively. SEQ ID

NO:2 and SEQ ID NO:4 are the murine and human homologues of the same protein and they are 91% similar to each other (see paragraph [00040] of the application). This is in striking contrast to the exemplary independent inventions of MPEP Section 806.04, namely a process of painting a house and a process of boring a well. MPEP Section 808.01 further points out that the situation under MPEP Section 806.04 is rarely presented since an application seldom contains disclosure of independent things. Here, a clear relation exists between groups III and IV. Therefore, it is not the rare situation to which Section 806.04 should apply according to MPEP 808.01.

Moreover, the present invention belongs to the field of biotechnology and according to MPEP 803.04, the Commissioner has decided *sua sponte* to partially waive the requirements of 37 CFR 1.141 *et seq.* (restriction requirements) for biotechnology inventions and permit a reasonable number of nucleotide sequences to be claimed in a single application. According to MPEP 803.04, up to ten independent and distinct nucleotide sequences will be examined in a single application without restriction.

For the above reasons, it is respectfully requested that the restriction requirement on groups III and IV be reconsidered and withdrawn.

Other groups that relate to SEQ ID NO:2 and SEQ ID NO:4, respectively, should also be examined together

For the same reasons provided above, groups I and II, groups V and VI, and groups VII and VIII should be examined together, respectively. It is respectfully requested that the restriction requirement on these groups be reconsidered and withdrawn.

Groups I-VIII should be examined together

Restriction requirements are optional in all cases. MPEP § 803. If the search and examination of a set of claims can be made without serious burden, the Examiner must examine them on the merits, even though they may be arguably directed at distinct or independent inventions. MPEP § 803. In the present application, it is respectfully submitted that claims in groups I-VIII can be examined together without serious burden on the Office.

Claims in groups I-VIII are closely linked. Groups I and II are directed at the murine and human homologues of the same protein that share a 91% similarity. The Examiner has asserted no basis for alleging distinct biological activities between the proteins of SEQ ID NOs: 2 and 4. Groups III and IV are directed to polynucleotides, genetic constructs, cells, and kits that relate to nucleotide sequences encoding the murine or human protein. Groups V and VI are directed at antibodies specific for the murine or human protein. Groups VII and

VIII are directed at a method that involves measuring the expression of the murine or human protein. A proper search for one group of claims would inevitably overlap with that for the others and the search results for one is relevant to the others. For example, a proper search for all these groups would involve searching for the highly homologous murine or human protein and if groups I and II or groups III and IV are found patentable, all other groups would also be considered patentable. In this regard, the applicants further note that all the groups are classified under the same class and many of them under the same subclass as well. Under this circumstance, it is not burdensome on the Office to examine these claims together. On the contrary, it will be unnecessarily burdensome on both the applicants and the Office to consider the highly related subject matter in separate patent applications. It is respectfully requested that the restriction requirement on groups I-VIII be reconsidered and withdrawn.

Groups IX-XII are not appropriate restriction groups

Independent claim 7 is directed at a method for diagnosing hepatocellular cancer by analyzing the expression level of a polypeptide or a polynucleotide encoding the polypeptide that is differentially expressed in cancerous and regenerating liver cells. The claim is not limited to the use of SEQ ID NOs:1-4. The Office Action divides claims 7-10 into four groups that cover the use of SEQ ID NO:1, SEQ ID NO:3, antibodies to SEQ ID NO:2, and antibodies to SEQ ID NO:4, respectively. This leaves certain subject matter in Claims 7, 8 and 9 not covered by any claim group. Clarification on groups IX-XII is respectfully requested.

No extension of time is believed to be necessary and no fee is believed to be due in connection with this response. However, if any extension of time is required in this or any subsequent response, please consider this to be a petition for the appropriate extension and a request to charge the petition fee to the Deposit Account No. 17-0055. No other fee is believed to be due in connection with this response. However, if any fee is due in this or any subsequent response, please charge the fee to the same Deposit Account No. 17-0055.

Respectfully submitted,

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